

WHAT IS CLAIMED IS:

1. A nickel-based alloy for producing components which have solidified in single crystal form, comprising:

at least 2.3% by weight rhenium;

tungsten;

aluminium, chromium, and cobalt,

wherein a weight ratio of tungsten to rhenium is 1.1 to 1.6.

2. A nickel-based alloy according to Claim 1, comprising 2.3 to 2.6% by weight rhenium.

3. A nickel-based alloy according to Claim 2, comprising 3.0 to 3.7% by weight tungsten.

4. A nickel-based alloy according to Claim 2, further comprising nickel.

5. A nickel-based alloy according to Claim 2, comprising:

6.2 to 6.8% by weight of aluminum;

7.2 to 7.8% by weight of cobalt;

5.8 to 6.4% by weight of chromium;

0.05 to 0.15% by weight of hafnium;

1.7 to 2.3% by weight of molybdenum;

2.0 to 2.6% by weight of tantalum; and

0.9 to 1.1% by weight of titanium.

6. A gas turbine comprising a component comprising a nickel-based alloy according to Claim 1.

7. A gas turbine according to Claim 6, wherein the component is a blade in a high-speed turbine stage.

8. A process for making a turbine blade comprising casting a nickel-based alloy comprising:

- at least 2.3% by weight rhenium;
- tungsten;
- aluminium, chromium, and cobalt,

wherein a weight ratio of tungsten to rhenium is 1.1 to 1.6.